

Claims

1. A catalyst comprising palladium, at least one alkali metal compound and, if desired, one or more promoters on a porous support, obtainable by loading the porous support, which comprises a reducible metal oxide of elements of groups IIIb, IVb, Vb, VIb of the Periodic Table of the Elements or ZnO or comprises a mixture of these oxides or a mixed oxide of these elements in which zinc may also be present, with at least one palladium compound, subsequently carrying out a reduction at a temperature of 300-600°C and additionally applying at least one alkali metal compound and, if desired, one or more promoters before or after the reduction.
2. A catalyst as claimed in claim 1 which comprises at least one potassium compound.
3. A catalyst as claimed in claim 1 or 2 which additionally comprises Au, Ba and/or Cd and/or their compounds as promoters.
4. A catalyst as claimed in one or more of claims 1 to 3, wherein the reducible support is TiO₂.
5. A catalyst as claimed in one or more of claims 1 to 4, wherein the reduction is carried out for a time in the range from 1 minute to 24 hours.
6. A catalyst as claimed in one or more of claims 1 to 5, wherein the reduction is carried out using gaseous or vaporizable reducing agents.
7. A catalyst as claimed in one or more of claims 1 to 6, wherein the reducing agent for the reduction

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is selected from the group consisting of H₂, CO, ethylene, NH₃, formaldehyde, methanol, hydrocarbons and their mixtures and mixtures of these reducing agents with inert gases.

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8. A process for producing catalysts, which comprises loading the porous support, which comprises a reducible metal oxide of elements of groups IIIb, IVb, Vb, VIb of the Periodic Table of the Elements or ZnO or comprises a mixture of these oxides or a mixed oxide of these elements in which zinc may also be present, with at least one palladium compound, subsequently carrying out a reduction at a temperature of 300-600°C and additionally applying at least one alkali metal compound and, if desired, one or more promoters before or after the reduction.
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9. The process as claimed in claim 8, wherein the catalyst comprises at least one potassium compound.
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10. The process as claimed in claim 8 or 9 wherein the catalyst additionally comprises Au, Ba and/or Cd and/or their compounds as promoters.
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11. The process as claimed in one or more of claims 8 to 10, wherein the reducible support is TiO₂.
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12. The process as claimed in one or more of claims 8 to 11, wherein the reduction is carried out for a time in the range from 1 minute to 24 hours.
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13. The process as claimed in one or more of claims 8 to 12, wherein the reduction is carried out using gaseous or vaporizable reducing agents.

14. The process as claimed in one or more of claims 8 to 13, wherein the reducing agent for the reduction is selected from the group consisting of H₂, CO, ethylene, NH₃, formaldehyde, methanol, hydrocarbons and their mixtures and mixtures of these reducing agents with inert gases.

15. The use of a catalyst obtainable as claimed in any of claims 8-14 for the preparation of vinyl acetate in the gas phase from ethylene, acetic acid or oxygen or oxygen-containing gases.

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